

Work Order ID 152652***152652***

Page 1

Wednesday, November 02, 2016 12:45:55 P

Item ID: D4884-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: End Fitting, Eye

Start Date: 11/2/2016 Start Qty: 16.00

16

Cust Item ID:

Required Date: 11/9/2016 Req'd Qty: 16.00

16

Customer:

Reference:

Approvals:

Process Plan:

DAS
21
9-89

Date: NOV 02 2016

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D4884

REV A

105

0.00

105

Doosan

Memo

0.00

Doosan Lathe

-Machine blank as per Machinist's turning detail. folio+drawing D4884-1.

16 ϕ 16-11-04

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Memo

0.03

Quality Control

16 ϕ 16-11-04

115

0.00

115

HAAS 5AXIS

Memo

0.00

HAAS CNC vertical machine #5

Mill as per folio FB509.

Ba 16/11/05 16 ϕ DAS
08
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER :			

Work Order ID 152652

Wednesday, November 02, 2016 12:45:55 P

152652

Item ID: D4884-1
Revision ID:
Item Name: End Fitting, Eye
Start Date: 11/2/2016 Start Qty: 16.00
Required Date: 11/9/2016 Req'd Qty: 16.00
Reference:

Approvals: Process Plan: Date: Tooling: Date: SPC (Y/N):
Run Start Stop
NR1 *NR2*

Sequence ID/ Work Center ID
Operation Description
Set Up/ Run Hours
Tool ID Tool # Plan Code Qty Accept Reject Qty Insp. Number Stamp

120 QC

Quality Control

Memo

0.05

QC8- Inspect parts - second check

0.00

130 Outsource2

Outsource process - NDT

Memo

0.00

Outsource process - NDT per QSI038 4.1

0.00

140 Packaging

Packaging

Memo

0.05

Receive & Inspect for Damage & Mat'l Certs

0.00

C OF C IS REQUIRED

ISSUE P/O: 32249

NOV 15 2016

DAS 9-89

NOV 15 2016

DAS 9-89

5/16-11-7

16

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coor. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order ID 152652***152652***

Page 3

Wednesday, November 02, 2016 12:45:55 P

Item ID: D4884-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: End Fitting, Eye

Start Date: 11/2/2016 Start Qty: 16.00

16

Cust Item ID:

Required Date: 11/9/2016 Req'd Qty: 16.00

16

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	QC5- Inspect part completeness to step on W/O	0.00							
150									
QC	Memo	0.05				16			DAS 38 9-89
Quality Control									NOV 15 2016
160	Identify as per dwg & Stock Location. <i>SK131</i>	0.00							
160									
Packaging	Memo	0.03				16			DAS 6 9-89
Packaging	IDENTIFY AS PER QSI 044 6.1								NOV 15 2016
170	QC21- Final Inspection - Work Order Release	0.00							
170									
QC	Memo	0.27							
Quality Control									16/11/21/17

NOV 15 2016

DAS
21
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
306 12-4				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Picklist Print

Wednesday, November 02, 2016 12:46:04 PM

Page 1
T

Work Order ID: 152652

152652

Parent Item: D4884-1

D4884-1

Parent Item Name: End Fitting, Eye

Start Date: 11/2/2016

Required Date: 11/9/2016

Start Qty: 16.00

Required Qty: 16.00

Comments: IPP REV:A NEW ISSUE 14-01-13 JLM VERIFIED BY:DD
IPP REV:A DOING PART IN HOUSE FROM NOW ON. RQ 16.11.02
VERIFIED BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M174PH-H900R1.500		Purchased	No				f	123.0000		5.894737			

M174PH-H900R1.500

**

17-4SS H900 ROUND BAR 1.500

Location

Loc Qty

Loc Code

MAT031

123

M128809

9

M129892

114

7.416'

11-11-04

DQA: _____ Date: _____

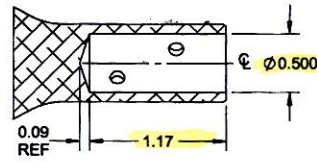


WORK ORDER NON-CONFORMANCE / UPDATE

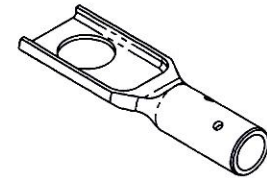
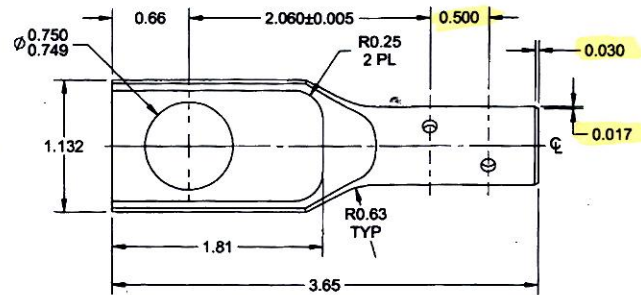
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coor. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

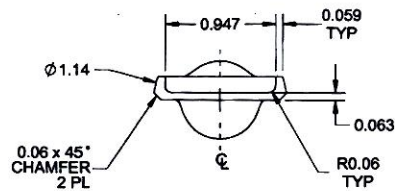


SECTION B-B C5-1

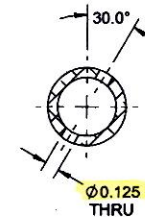
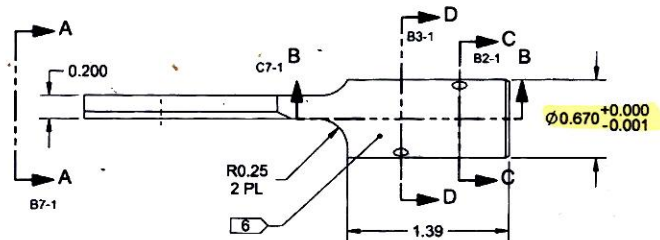


**SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER**

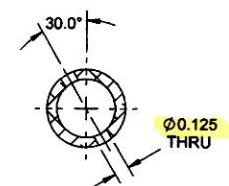
NO. ~~D488~~ 152652
Em 16/10/25



VIEW A-A B6-1



SECTION C-C C4-1



SECTION D-D C5-1

D4884-1 END FITTING, EYE

2013-12-12

NOTES:

- 1) MATERIAL: 17-4 PH/S17400/TYPE 630 SS ROUND BAR, H900 CONDITION PER AMS 5643/ASTM A564 DART SPEC M17-4-R
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.13 lbs
- 8) LIQUID PENETRANT INSPECT PER QSI 038 6.1.1 (ASTM E1417 LEVEL 2)

FB509
17-4
21.38

APPROVED

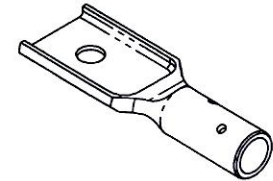
A NEW ISSUE		RF	13.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN	RF		
CHECKED	DC		
MFG. APPR.	JLM		
APPROVED	HS		
DE APPR.	DS		
DATE	13.12.01		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **D4884** REV. A
SHEET 1 OF 2
TITLE **END FITTING** SCALE NTS

COPYRIGHT © 2013 BY DART AEROSPACE LTD
THIS DOCUMENT IS UNCLASSIFIED AND IS AVAILABLE TO THE PUBLIC ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

RB
D3674



2) FINISH: N/A
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
7) WEIGHT: 0.14 lbs
8) LIQUID PENETRANT INSPECT PER QSI 038 6.1.1 (ASTM E1417 LEVEL 2)

APPROVED	DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO D4884 TITLE END FITTING SCALE NTS
	DRAWN	RF	
	CHECKED	DC	
	MFG. APPR.	JLM	
	APPROVED	HS	
	DE APPR.	DS	
	DATE	13.12.01	

152652

DART AEROSPACE LTD		Work Order: <u>152652</u>
Description: <u>End Fitting Eye</u>		Part Number: <u>D488A-1</u>
Inspection Dwg: <u>D488A</u>	Rev: <u>A</u>	Page 1 of 1

INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
.030	$\pm .010$	.025	✓		Vern LPO9	
.017	$\pm .010$	.017	✓		↓	
.500	$\pm .010$	.500	✓		↓	
Ø.670	$+ .000 / - .001$	.6685	✓		Mic LPO1	
Ø.500	$+ .006 / - .001$	.503	✓		Gage Pin	
Ø.125	$+ .004 / - .001$	.126	✓		↓	
1.17	$\pm .03$	1.160	✓		Vern LPO9	
2.060	$\pm .005$	2.064	✓		H-6	31006
0.66	$\pm .030$	0.665	✓		Vern	GA-13
0.750	$+ .000 / - .001$	0.7497	✓		CMM	
1.132	$\pm .010$	1.136	✓		Vern	GA-13
1.81	$\pm .030$	1.816	✓		H-6	31006
R0.63	$\pm .030$	R0.630	✓		R-6	ref.
3.65	$\pm .030$	3.663	✓		H-6	31006
0.059	$\pm .010$	0.062	✓		Vern	GA-13
0.947	$\pm .010$	0.947	✓		"	"
Ø1.14	$\pm .030$	Ø1.138	✓		"	"
0.06 X 45°	$\pm .030 \times \pm .120$	0.063 X 45°	✓		"	"
R0.06	$\pm .030$	R0.063	✓		R-6	ref.
0.063	$\pm .010$	0.060	✓		Mic	GA-03
0.200	$\pm .010$	0.197	✓		"	"
R0.25	$\pm .030$	R0.250	✓		R-6	REF
1.39	$\pm .030$	1.400	✓		R-6	31006
30°	$\pm .120$	30°	✓		Angle M.	CNC-17
30°	$\pm .120$	30°	✓		"	"

Measured by: <u>16-11-04 / J.A.</u>	Checked by: <u>16/11/05</u>	QC Inspector:
Date:	Date: <u>16-11-7</u>	Date:

Engineering Approval: (If necessary)	Date:
--	--------------

Rev	Date	Change	Revised by	Approved
B	14.07.31	New Issue	KJ	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34249**

Purchase Order Date 11/9/2016
PO Print Date 11/15/2016

Page Number 2 of 5

Order From :
SKYSERVICE
6120 MIDFIELD ROAD
MISSISSAUGA, ONTARIO L5P 1B1
CANADA

VC-SKY001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 905-678-5636

Ship To Contact
Ship To Phone
Ship Via: Delivered
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA - (Free Carrier)

Line Total: \$0.00

3 152652 D4884-1 END FITTING 11/15/2016
Yes
11/15/2016

16.00

\$0.00 \$0.00

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

DAS
26
9-89

NOV 15 2016

Line Total: \$0.00

4 150393 D119-796-141 11/15/2016
CROSSTUBE
Yes
11/15/2016

1.00

\$0.00 \$0.00

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Line Total: \$0.00

5 150391 D119-796-141 11/15/2016
CROSSTUBE
Yes
11/15/2016

1.00

\$0.00 \$0.00

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Note:

11/15/2016

**skyservice****Work Order Traveler**

Sky Service F.B.O. Inc.

DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO30125	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: 34249
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT ON 8 CROSSTUBES, 6 STRUTS AND 16 END FITTINGS AS PER PO34249

6 STRUTS, ITEM ID# D4880-1 , WORK ORDER ID# 152535

16 END FITTING, ITEM ID# D4884-1 , WORK ORDER ID# 152652

4 FWD CROSSTUBES , ITEM ID# D119-796-141 , WORK ORDER ID# 150979, 150391, 150392, 150393

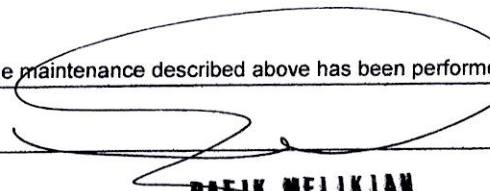
4 AFT CROSSTUBES , ITEM ID# D119-796-241 , WORK ORDER ID# 150596, 150597, 149516, 150154

NOV 15 2016

DAS
26
9-89

Action Taken:						Date:	Initial/Stamp:
LPI C/O IAW ASTM E-1417M-13 ***NO CRACK FOUND*** PEN. ZL-56, MPO13600, CLEANER SKC-S MPO13923 , EMU. MPO15896, DEV. MPO11715 , UV LIGHT M-20142						NOV 14 2016	 
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature: 	ACA/SCA Stamp 	Date: NOV 14 2016
Name: RAFIK MELIKIAN		